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10/620,143

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EXAMINER

HSU, ALPUS

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/620,143	<b>Applicant(s)</b> PAI ET AL.	
	<b>Examiner</b> Alpus H. Hsu	<b>Art Unit</b> 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 1-19 and 23-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-22 and 33-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. Claims 1-19, 23-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected groups of inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on January 8, 2009.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed plurality of application request queues as in claim 20 must be shown or the feature(s) canceled from the claim(s). To be more specific, only one application request queue (see Figure 5) and a plurality of application request channels (see Figure 9) were shown in the original drawing sheets. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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3. Claims 20-22, 33-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 20, line 8, it is unclear as to where the first and second requests were coming from. Lines 15-18, it is confusing for reciting “verifying .. bandwidth available ... larger than the first request; verifying ... bandwidth available ... larger than an anticipated response ...”. How can a bandwidth compared with a request or a response? Same rejection is also applicable to claim 21, lines 3-6, for the same reasoning.

Claim 22 is rejected for depending on rejected claims 20 and 21.

In claim 33, line 2, it is unclear as to where the requests were coming from. Line 6, it is confusing for reciting “requests”. Is it referring to the same requests as in line 2 of the same claim?

Claims 34 and 35 are rejected for depending on the rejected claim 32.

Claims 36-41, 51-53 are rejected for the same reasoning as claims 33-35.

In claim 42, lines 4-5, it is vague and indefinite for reciting “queuing the request based on an upstream network path over which a response to the request may be received” since it is unclear as to based on what criteria of the network path, the request is queued.

In claim 43, lines 1-2, claim 44, line 1-2, it is confusing for reciting “means for scheduling further comprises means for scheduling”.

Claim 45 is rejected for depending on rejected claim 42.

Claims 46-53 are rejected for the same reasoning as in claims 42-45.

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In addition, in claim 48, lines 10-12, it is confusing for reciting “a comparison between an available bandwidth associated with the upstream network path, the upstream bandwidth allocation, and a size of an anticipated response to the request”. What are the two components used for the comparison?

In claim 49, lines 1-2, it is confusing for reciting “a size”. Is it referring to the same size as in line 12 of claim 48?

Claim 50 is rejected for the same reasoning as in claim 48 above.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 42, 43, 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over SALA et al. in U.S. Patent No. 7,333,495 B2, hereinafter referred to as SALA, in view of LAURSEN et al. in U.S. Patent No. 5,805,804 A, hereinafter referred to as LAURSEN.

Regarding claim 42, SALA discloses a system comprising: means for receiving a request (122); means for queuing (124) the request based on an upstream network path over which a response to the request may be received ; and means for scheduling (DOWNSTREAM SCHEDULER) transmission of the request based, at least in part, on an available upstream network bandwidth.

SALA differs from the claim, in that, it does not disclose the feature of receiving the request from an application, wherein the request is to be transmitted to a particular client device, which is well known feature in the art for service programs distribution in CATV field.

LAURSEN, for example, from the same field of endeavor, teaches the same feature of receiving the request from an application, wherein the request is to be transmitted to a particular client device (see col. 11, line 64 to col. 12, line 5), which can be easily adopted by one skilled in the art to implement in the system of SALA, to provide conventional service programs distribution from head-end to client device to enhance the system performance.

Regarding claim 43, SALA in view of LAURSEN teaches that the means for scheduling further schedules the transmission of the request based, at least in part, on an available downstream network bandwidth (see col. 4, lines 9-40 in SALA).

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Regarding claim 45, SALA in view of LAURSEN teaches a further means for estimating an anticipated response size (see col. 6, lines 4-11 in SALA).

Referring to claim 46, SALA in view of LAURSEN also teaches a computer-readable storage media (see col. 8, lines 36-44 in SALA) comprising computer-executable instructions that, when executed, direct a computer system to perform a method with method steps that are the same as the functions recited in claim 42.

8. Claims 44 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over SALA in view of LAURSEN as applied to claim 42 above, and further in view of DUGAD et al. in U.S. Patent No. 7,382,755 B2, hereinafter referred to as DUGAD.

Regarding claim 44, SALA in view of LAURSEN differs from the claim, in that, it does not disclose the feature of scheduling based on a number of pending requests previously transmitted to other client devices associated with the upstream network paths, which is also well known in the art for load balancing purpose.

DUGAD, for example, from the similar field of endeavor, teaches the feature of scheduling based on a number of pending requests previously transmitted to other client devices associated with the upstream network paths (see col. 8, lines 34-52, col. 9, line 60 col. 10, line 16), which can be easily adopted by one skilled in the art to implement in the system of SALA in view of LAURSEN, to provide specific request scheduling to further improve the system efficiency.

Regarding claim 47, SALA in view of LAURSEN and further in view of DUGAD also teaches a computer-readable storage media (see col. 8, lines 36-44 in SALA) comprising

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computer-executable instructions that, when executed, direct a computer system to perform a method with method steps that are the same as the functions recited in claims 42 and 44.

9. Claims 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over HEMPEL in U.S. Patent No. 7,464,380 B1, hereinafter referred to as HEMPEL.

Regarding claim 51, HEMPEL discloses a computer-readable storage media (see col. 3, lines 9-13) comprises computer-executable instructions that, when executed, direct a computing system to perform a method comprising: scheduling requests at a scheduling interval by placing the requests in a dispatch queue, the scheduling interval defined by a particular value (see col. 2, lines 44-47, col. 3, lines 1-9, col. 5, lines 38-47); determining a number of requests in the dispatch queue (see col. 3, lines 1-4, col. 6, lines 44-51).

HEMPEL differs from the claim, in that, it does not disclose the feature of in an event that the number of requests in the dispatch queue is greater than or equal to a maximum number of allowed pending requests, preventing requests from being scheduled until the number of requests in the dispatch queue is less than the maximum number of allowed pending requests, which is well known in the art and commonly applied in communications field for data flow controlling purpose. Since HEMPEL also discloses the feature of maximizing the scheduling process (see col. 2, lines 52-57, col. 6, lines 44-51), it would have been obvious to one skilled in the art to further modify the system of HEMPEL to provide the same feature of preventing requests from being scheduled until the number of requests in the dispatch queue is less than the maximum number of allowed pending requests in the event that the number of requests in the dispatch queue is greater than or equal to a maximum number of allowed pending requests to provide data flow control to further improve the system efficiency.



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Regarding claim 52, HEMPEL discloses that the particular value is configurable (see col. 2, lines 52-57).

Regarding claim 53, although HEMPEL fails to disclose the feature of providing the maximum number of allowed pending requests being equal to an integer multiple of a number of requests that can be scheduled into the dispatch queue during a single scheduling interval, it would have been obvious to one skilled in the art to further modify as design choice.

10. Claims 20-22, 33-41, 48-50 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Moura et al., Liebowitz et al., Gorman et al., Logston et al., Rowlinson et al., and Byron are all cited to show the common feature of CATV system providing communication between head-end and client devices utilizing scheduling and bandwidth allocation schemes similar to the claimed invention.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alpus H. Hsu whose telephone number is (571)272-3146. The examiner can normally be reached on M-F (5:30-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AHH

/Alpus H. Hsu/  
Primary Examiner, Art Unit 2419